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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,383	10/18/2001	Rajendra Kumar	D-386	7672

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EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,383

Applicant(s)

KUMAR ET AL.

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-6 is/are allowed.
- 6) ☒ Claim(s) 1 and 7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed April 26, 2006 have been fully considered but they are not persuasive.
2. Applicant argues that Kost fails to teach "channelization" since channelization involves separating a wideband signal into a plurality of frequency band signals. However, as pointed out in the previous Office action, the claimed invention does not include such a definition. In other words, the claimed invention does not require a separation of a wide band signal into a plurality of frequency band signals. It merely calls for "channelizing an IF wideband input signal into separated channelized digital output signals." In that sense, Kost et al clearly teaches separate digital output signals (91,93) that are obtained by a bank of samples, converters, polyphase filters and a processor. In sum, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. "separating a wideband signal into a plurality of frequency band signals") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It should be noted that this feature is specifically recited in claims 8 and 9.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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4. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marko et al (US 6,823,169 previously cited) in view of Kost et al (US 6,081,215 previously cited).

Claim 1.

Marko et al discloses a system, see Fig.5, comprising;

a complex mixer (216,218) for quadrature demodulation of a wideband IF input signal into a complex signal, the complex signal comprising I and Q quadrature baseband signals (see col. 6, lines 30-46),

a sampler and converter, i.e., A/D converter (224,226), for converting the complex signal into sampled digital complex signals and

a clock generator (not shown but is required to provide a sampling clock signal to the A/D converter).

The claimed invention differs from Marko et al's receiver in that it uses a bank of samplers and a bank of converters, and a polyphase clock generator to provide sampling clocks to the plurality of samplers in a phase-staggered manner. Referring to Fig.4, Kost et al teaches a bank of low-rate A/D converters (48,50) and a polyphase clock generator (70) providing sampling clocks (71,73) of staggered phases to the A/D converters for the purpose of overcoming the shortcomings of a single A/D converter such as large power consumption and non-linearity when a wide bandwidth signal is to be sampled. See Kost et al at col. 1, lines 41-43. Kost et al further teach a polyphase filter bank of filters (78,80) for respectively filtering the sampled I and Q quadrature baseband signals and a processor (82,84) for transforming the filtered complex signals into the channelized digital output signals. See col. 7, line 49 ~ col. 8, line 4. Note that the complex signal demodulated by the complex mixer in Marko et al's system

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has a wide bandwidth. See Mark et al at col. 5, lines 46-47. Thus, it would have been obvious to one skilled in the art at the time the invention was made to replace the A/D converters of Marko et al with a respective set of a plurality of low rate A/D converters (i.e., a bank of sampler coupled to a bank of converters) clocked by a polyphase clock generator, as taught by Kost et al, for the purpose of reducing power consumption and non-linearity associated with the single A/D conversion of the wide bandwidth signal in the receiver of Marko et al.

Allowable Subject Matter

5. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claims 2-6 are allowed.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 5, 2006

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**KEVIN KIM
PATENT EXAMINER**